NOVA SCOTIA
DEPARTMENT OF
MINES AND ENERGY

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SUMMARY OF THE MAJOR LIMESTONE/DOLOMITE DEPOSITS OF NOVA SCOTIA

by

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INTRODUCTION

This report is a compilation of all pertinent data on major limestone/dolomite deposits (Fig. 1) and indicates each deposit's potential for development. Estimates of reserves, assay results, location, transportation, ownership and landuse limitations affecting the development of each deposit are the main items listed. A bibliography of the previous work which is on file at the Nova Scotia Department of Mines and Energy library is also included for each deposit. Please note that only deposits with proven potential were selected and other known occurrences may be added at a later date if they exhibit potential for development.

The limestone/dolomite deposits included are of two different ages. The older, Precambrian George River Group deposits tend to be more crystalline and larger with some containing reserves in excess of 300 million t. The younger Carboniferous Windsor Group deposits tend to be much smaller, usually in the 1-2 million t range and are generally unaltered and porous.

APPLICATIONS AND ESTIMATED RESERVES AVAILABLE

1. Metallurgical stone	520 million t potential
2. Fluidized Bed Combustion	520 million t potential as above, but depends on sulphation capacity
3. Cement Manufacture	800 million t
4. Aggregate	800 million t; 50 million t marble chips
5. Fillers and Extenders	15 million t
6. Agricultural Lime	55 million t
7. Mine Rock Dust	25 million t

Figure 1. Major limestone/dolomite deposits in Nova Scotia.

CAMPBELL BROOK (RIVER DENYS), INVERNESS COUNTY

ORE RESERVES

Limestone (George River) 40 million t

GRADE (Milligan, 1970)	LOI %	SiO_2 %	R_2O_3 %	CaO %	$CaCO_3$ %	MgO %
Outcrop	42.10	3.22	1.26	52.70	94.0	0.62
	42.18	3.20	1.00	52.05	92.9	1.42
	42.04	3.02	1.02	53.05	94.7	0.77

LOCATION 3 km southwest of River Denys, Inverness County

ACCESS 4 km to Bras d'Or Lakes
Highway 105 10 km on good secondary road
CNR 3 km at River Denys

STATUS Mineral Rights - Aurion Minerals Ltd. (Crown Limestone)
Surface landownership - private

LANDUSE LIMITATIONS Excellent quarrying location

PREVIOUS WORK Map, geochemistry and DDH, NSDME Assessment Report 11F/14A 28-J-08(00), 1965
Milligan, G. C., Province of Nova Scotia Department of Mines, Memoir 7, 1970

CAPE DAUPHIN, VICTORIA COUNTY

ORE RESERVES

Limestone (George River)	20 million t siliceous limestone 1 million t grey limestone 1.2 million t white-pink marble
Dolomite (George River)	900 000 t to depth of 30 m

GRADE (Murray, 1971)		LOI %	SiO_2 %	R_2O_3 %	CaO %	$CaCO_3$ %	MgO %	MnO %
Dolomite	DDH #18	46.38	0.73	1.19	31.19	55.66	20.16	0.19
	DDH #21	45.91	1.03	1.02	31.51	56.23	20.26	0.14
	DDH # 6	46.61	1.27	1.76	31.33	55.91	19.10	0.15

LOCATION Northeastern side of Kellys Mountain at Cape Dauphin in Victoria County, 61 km from Sydney

ACCESS On tidal water, 8.4 m draft vessels
Highway 105 14.5 km on good gravelled road
CNR 36 km over rugged terrain

STATUS Mineral Rights - claimed by Kelrock Ltd. (AquaGold Resources Inc.)
Surface landownership - private and Stora Forest Industries Limited

LANDUSE LIMITATIONS Good quarrying location, Bird Island bird sanctuary nearby

PREVIOUS WORK

Murray, D. A., Cape Dauphin Dolomite Deposits, NSDME Assessment Report 11K/08B 16-Q-04(02), 1972
Shea, F. S., NSDME Assessment Report 11K/08B 16-Q-94(01), 1970
MacNeil, D. J., NSDME Assessment Report 11K/08B 28-Q-04(02), 1973

CHURCHVIEW, INVERNESS COUNTY

ORE RESERVES

Dolomite (George River)	4.8 million t to 30 m depth

GRADE	SiO_2 %	CaO %	$CaCO_3$ %	MgO %	MnO %	Al_2O_3 %	Fe_2O_3 %	P_2O_5 %
composite of 4 samples	2.04	31.88	56.89	19.96	0.015	0.16	0.23	0.0016

LOCATION	1.6 km northwest of Whycocomagh in Inverness County
ACCESS	4.8 km to Bras d'Or Lake, 6.7 m draft vessels Highway 105 2 km via good roads CNR 11 km at Orangedale
STATUS	Mineral Rights - claimed by Kelrock Ltd. (AquaGold Resources Inc.) Surface landownership - private
LANDUSE LIMITATIONS	Adjacent to Whycocomagh Indian Reservation #2
PREVIOUS WORK	Miscellaneous Memos, NSDME Assessment Report 11F/14D 28-J-59(00), 1912-1964 Shaw, W. S., NSDME Assessment Report 11F/14D 16-J-14(01), 1973 Shaw, W. S., NSDME Assessment Report 11F/14D 16-J-14(02), 1975 Shaw, W. S., NSDME Assessment Report 11F/14D 16-J-14(03), 1975

GABARUS LAKE, CAPE BRETON COUNTY

ORE RESERVES

Limestone (Windsor)	2.5 million t

GRADE (Shea and Murray, 1969)

LOI %	SiO_2 %	R_2O_3 %	CaO %	$CaCO_3$ %	MgO %
40.87	1.16	1.78	55.35	98.78	0.55

LOCATION On western side of Gabarus Lake in southeastern part of Cape Breton County

ACCESS
Tidal water 6 km at Gabarus Bay
<1 km to paved secondary road
CNR 50 km

STATUS
Mineral Rights - claimed by Kelrock Ltd. (AquaGold Resources Inc.)
Surface landownership - private

LANDUSE LIMITATIONS Good quarrying location, but Gabarus Lake would have to be protected

PREVIOUS WORK
Miscellaneous DDH logs, NSDME Assessment Report 11F/16A 28-C-42(00), 1964
Shea, F. S. and Murray, D. A., Limestones and Dolomites of Nova Scotia, Pt. 1, Cape Breton Island, NSDM Bulletin No. 2, 1969

GLEN MORRISON, CAPE BRETON COUNTY

ORE RESERVES

Limestone (Windsor)	Ore reserve information is available from Kelrock Ltd. (AquaGold Resources Inc.)				
GRADE	**SiO_2 %**	**R_2O_3 %**	**CaO %**	**$CaCO_3$ %**	**MgO %**
Average of outcrop	1.55	1.33	53.46	95.40	0.41

LOCATION The deposit is located 3.2 km southeast of the head of East Bay and adjacent to Meadows Road, Cape Breton County

ACCESS Tidal water shipping available at Sydney Harbour
24 km via good roads; the deposit is adjacent to a paved, secondary road

STATUS Mineral Rights - Kelrock Ltd. (AquaGold Resources Inc.) (Crown Limestone)
Surface landownership - private

LANDUSE LIMITATIONS Sydney River Watershed

PREVIOUS WORK

Miscellaneous Memos, NSDME Assessment Report 11F/16C 28-C-53(00), 1930-1960
Thenerkane, A. P., DOSCO, NSDME Assessment Report 11F/16C 28-C-53(01), 1930
Gillis, H. B., DOSCO, NSDME Assessment Report 11F/16C 28-C-53(02), 1930
Preliminary Report, NSDME Assessment Report 11F/16C 28-C-53(03), 1930
Report on diamond drilling 1988, Kelrock Ltd., NSDME Assessment Report 90-059

GLENCOE, INVERNESS COUNTY

ORE RESERVES (See MacNeil, 1977)

Limestone (George River) 345 million t cement grade[*1] to 120 m or
258 million t metallurgical grade[*2]

Dolomite[*3] 6 million t to 120 m

GRADE nearly all grades available

	LOI %	SiO_2 %	CaO %	$CaCO_3$ %	MgO %	Al_2O_3 %	Fe_2O_3 %
Limestone DDH #G3	42.86	1.46	54.61	97.46	0.61	0.30	0.13
Dolomite DDH #H5	46.39	1.26	29.34	52.36	21.21	0.59	0.43
(4018 assays on file)							

LOCATION Upper Glencoe, Inverness County

ACCESS Tidal water <13 km to Bras d'Or Lake, 6.7 m draft vessels
<60 km to the Strait of Canso
Highway 105 6.5 km on poor dirt road
CNR 9.7-12.9 km at River Denys and Orangedale

STATUS Mineral Rights - closure (contact Nova Scotia Department of Mines and Energy)
Surface landownership - Crown and private owners

LANDUSE LIMITATIONS Excellent location for quarrying

PREVIOUS WORK
MacNeil, D. J., NSDME Assessment Report 11F/14C 28-J-21(01), 1972
MacNeil, D. J., NSDME Assessment Report 11F/14C 28-J-21(02), 1973
MacNeil, D. J., NSDME Assessment Report 11F/14C 28-J-21(03), 1974
MacNeil, D. J., NSDME Open File Report 329, 1977
MacDonald, R. H., DDH report, NSDME Open File Report, in preparation

[*1] Cement grade SiO_2 <20%, MgO <4%
[*2] Metallurgical grade SiO_2 <2.5% MgO <4%
[*3] Dolomite SiO_2 <1% MgO >20%

GLENDALE, INVERNESS COUNTY

ORE RESERVES

Limestone (George River)	90 million t: 85 million t grey, 5 million t white (Shaw, 1986, personal communication)
Dolomite (George River)	large tonnage potential, unexplored

GRADE	SiO_2 %	R_2O_3 %	CaO %	$CaCO_3$ %	MgO %
Limestone	2.98	1.71	51.57	92.03	2.04
Dolomite (average of 47 samples; Shaw, 1986, personal communication)	1.76	1.26	30.0	53.54	19.59

LOCATION 2.5 km off Highway 105 on River Denys Mountain Road at Glendale, Inverness County

ACCESS
Tidal water 32 km at Strait of Canso
Highway 105 2.5 km via good road
CNR 8 km at Big Brook

STATUS
Mineral Rights - staked by Kelrock Ltd. (AquaGold Resources Inc.) (Crown Limestone)
Surface landownership - private

LANDUSE LIMITATIONS Very favourable location for quarrying

PREVIOUS WORK
Miscellaneous Memos, NSDME Assessment Report 11F/48B 28-J-23(00), 1940
Midgely, J., NSDME Assessment Report 11F/14B 28-J-23(01), 1911
Miscellaneous Memos, NSDME Assessment Report 11F/14B 28-J-23(02), 1964
Thompson, A., NSDME Assessment Report 11F/14B 28-J-23(03), 1975

INGONISH, VICTORIA COUNTY

ORE RESERVES

Dolomite (Windsor) 10 million t to 19.5 m

GRADE	SiO_2 %	R_2O_3 %	CaO %	$CaCO_3$ %	MgO %	MnO %	Al_2O_3 %	Fe_2O_3 %	P_2O_5 %
shoreline	1.04		41.22	73.56	11.61	0.37	0.27	0.34	0.26
(Shea and Murray, 1969)	1.69		30.69	54.77	19.69				
average of DDHs									
(Shea and Murray, 1969)	0.65	1.47	29.18	52.07	20.68				

LOCATION Located on the northeastern coast of Victoria County at Ingonish

ACCESS
On tidal water
Cabot Trail bisects deposit
CNR 80 km over very rugged terrain

STATUS
Mineral Rights - open at time of writing
Surface landownership - private

LANDUSE LIMITATIONS Numerous single family dwellings throughout deposit. Adjacent to Cape Breton Highlands National Park. Scenic location with designated beaches nearby

PREVIOUS WORK
Wright, J. C., NSDME Assessment Report 11K/09 16-Q-06(01), 1965
Shea, F. S. and Murray, D. A., Limestones and Dolomites of Nova Scotia, Pt. 1, Cape Breton Island, NSDM Bulletin No. 2, 1969

IRISH COVE, CAPE BRETON AND RICHMOND COUNTIES

ORE RESERVES

Limestone (Windsor) <500 000 t

GRADE	LOI %	SiO_2 %	R_2O_3 %	CaO %	$CaCO_3$ %	MgO %	MnO %
DOSCO, 1954, DDHs	44.23	0.64	1.12	48.30	86.19	5.18	0.46
	43.83	0.79	0.78	50.37	89.89	1.79	0.39
	42.33	2.78	1.69	51.91	92.63	0.50	0.72

LOCATION Southwestern shore of the Bras d'Or Lakes at Irish Cove on the Richmond County and Cape Breton County boundary

ACCESS On Bras d'Or Lakes
Highway 4 crosses the deposit
CNR 47 km at Sydney River

STATUS Mineral Rights - Scotia Limestone Ltd. lease #66-4 (Crown)
Surface landownership - Scotia Limestone Ltd.

LANDUSE LIMITATIONS Operating quarry at present

PREVIOUS WORK Miscellaneous Memos, Sketches and Maps, NSDME Assessment Report 11F/15A 28-O-09(00), 1949-1965
Miscellaneous DDH Logs and Assays, NSDME Assessment Report 11F/15A 28-O-09(00), 1949-1963

KELLYS COVE, VICTORIA COUNTY

ORE RESERVES

Dolomite (George River) 15 million t to sea level

GRADE

SiO_2 %	CaO %	$CaCO_3$ %	MgO %	MnO %	Al_2O_3 %	Fe_2O_3 %	P_2O_5 %
1.00	32.27	57.39	19.39	0.12	0.26	0.50	0.021

LOCATION Northeastern side of Kellys Mountain at Kellys Cove in Victoria County 55 km from Sydney

ACCESS On tidal water, 8.4 m draft vessels
Highway 105 6.4 km via good gravelled road
CNR 30 km via rugged terrain and bridge

STATUS Mineral Rights - Mining lease #80-1 Scotia Limestone (SYSCO) agreement with Mosher Limestone, grinding mill and marine loading dock on site
Surface landownership - Scotia Limestone

LANDUSE LIMITATIONS Excellent location for quarrying, but in highly visible location

PREVIOUS WORK

Shea, F. S. and Murray, D. A., Limestones and Dolomites of Nova Scotia, Pt. 1, Cape Breton Island, NSDM Bulletin No. 2, 1969
Douglas, G. V., NSDM Annual Report, 1941
Goudge, M. G., NSDME Assessment Report 11K/08B 16-Q-13(02), 1943
Shaw, W. S., NSDME Assessment Report 11K/08B 16-Q-40(01), 1977
MacNeil, D. J., NSDME Assessment Report 11K/08B 16-Q-40(02), 1978

KEWSTOKE, INVERNESS COUNTY

ORE RESERVES

Limestone (George River)	305 million t cement grade*1 80 million t metallurgical grade*2
Dolomite*3 (George River)	14 million t in 5 zones

GRADE	LOI %	SiO_2 %	R_2O_3 %	CaO %	$CaCO_3$ %	MgO %	MnO %
Limestone (average of 10 assays)	42.62	2.33	1.10	51.10	91.19	2.60	0.11
Dolomite (average of 4 assays)		2.46	1.69	34.86	52.21	16.55	0.07

LOCATION 11.3 km northwest of Whycocomagh, Inverness County, at Kewstoke

ACCESS Tidal water 14 km on Bras d'Or Lakes at Whycocomagh approximately 20 km to Northumberland Strait at Port Hood
Highway 105 11.3 km at Whycocomagh via good road
CNR 24 km at Orangedale

STATUS Mineral Rights - staked by Kelrock Ltd. (AquaGold Resources Inc.) (Crown Limestone)
Surface landownership - private, SYSCO

LANDUSE LIMITATIONS Very favourable location for quarrying

PREVIOUS WORK

Miscellaneous Memos, NSDME Assessment Report 11F/14D 28-J-30(00), 1910-1964
DDH Records, NSDME Assessment Report 11F/14D 28-J-30(01), 1965
Shaw, W. S., Work report, NSDME Assessment Report 11F/14D 28-J-30(02), 1971
MacNeil, D. J., Work report, NSDME Assessment Report 11F/14D 28-J-30(03), 1972
MacNeil, D. J., DDH report, NSDME Assessment Report 11F/14D 28-J-30(04), 1974
MacNeil, D. J., Work report, NSDME Assessment Report 11F/14D 28-J-30(05), 1974

*1 Cement grade SiO_2 <20%, MgO <4%
*2 Metallurgical grade SiO_2 <2.5% MgO <4%
*3 Dolomite SiO_2 <1% MgO >20%

MARBLE MOUNTAIN, INVERNESS COUNTY

ORE RESERVES

Limestone (George River) 4 million t to 9 m elevation

GRADE (Milligan, 1966)	LOI %	SiO_2 %	R_2O_3 %	CaO %	$CaCO_3$ %	MgO %
M122	41.92	3.42	1.14	52.86	94.33	0.56
M119	41.88	3.36	0.70	52.70	94.05	1.25

LOCATION Along northeastern side of North Mountain at Marble Mountain, Inverness County

ACCESS On tidal water on Bras d'Or Lake (8 m at old pier)
Good paved road crosses deposit
CNR 5 km at River Denys, 22 km at Orangedale

STATUS Mineral Rights - L. E. Shaw (not Crown Limestone)
Surface landownership - N.S. Department of Lands and Forests

LANDUSE LIMITATIONS Site of large, abandoned quarry, picturesque and visible location on Bras d'Or Lakes; proposed Provincial Park site

PREVIOUS WORK Miscellaneous Memos, NSDME Assessment Report 11F/14A 28-J-37(00), 1901-1969
Milligan, G. C., NSDME Assessment Report 11F/14A 28-J-37(01), 1966
Luke, P., NSDME Economic Geology Series 90-2, 1990

ORANGEDALE (STONY CREEK), INVERNESS COUNTY

ORE RESERVES

Dolomite (Windsor) 250 000 t

GRADE	LOI %	SiO_2 %	R_2O_3 %	CaO %	$CaCO_3$ %	MgO %
Murray DDH #17 (over 44 ft)	46.22	2.34	2.04	30.05	53.62	19.09
Murray DDH #21 (over 62 ft)	46.71	1.313	1.842	30.61	54.63	19.24
Murray DDH #25 (over 100 ft)	46.80	0.86	1.23	31.04	55.39	19.68

LOCATION 2.2 km southeast of Orangedale, Inverness County, on a peninsula which juts into the Bras d'Or Lake to MacLean Point, separating North Basin from Denys Basin

ACCESS On tidal water
Highway 105 8 km on good secondary road
CNR 1.5 km to siding at Orangedale

STATUS Mineral Rights - open (Crown Limestone)
Surface landownership - private

LANDUSE LIMITATIONS Good quarrying location

PREVIOUS WORK Murray, D. A., Stony Creek Dolomite Deposit, unpublished report, 1970

SOUTHSIDE ANTIGONISH HARBOUR (CALPO) LIMESTONE DEPOSIT, ANTIGONISH COUNTY

ORE RESERVES

Limestone (Windsor)	6.5 million t

GRADE	LOI %	SiO_2 %	R_2O_3 %	CaO %	$CaCO_3$ %	MgO %
(Murray, 1975)	43.60	0.73	0.35	55.25	98.60	0.55

LOCATION On the southeastern side of Antigonish Harbour, 6.4 km north of Highway 104 at Lower South River, Antigonish County

ACCESS On tidal water on Antigonish Harbour
Highway 104 6.4 km on paved road
CNR 5.6 km on paved road at South River Station

STATUS Mineral Rights - Ridge Brokers Ltd., lease #71-3 (Crown Limestone)
Surface landownership - Crown, private

LANDUSE LIMITATIONS Operating quarry at present, good location for quarrying

PREVIOUS WORK

NSDM, Annual Report, DDHs, 1945
NSDM, Annual Report, DDHs, 1951
N.S. Research Foundation Report #13-63, August 1963
Murray, D. A., Limestones and Dolomites of Nova Scotia, NSDM Bulletin No. 2, Pt. II, 1975
Murphy, R., Report on Diamond Drilling Program, 1989